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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/566,300	01/25/2006	Ryo Suzuki	OGOSH42USA	2014

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HOWSON & HOWSON LLP
501 OFFICE CENTER DRIVE
SUITE 210
FORT WASHINGTON, PA 19034

EXAMINER	
LI, JUN	

ART UNIT	PAPER NUMBER
1732	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

docketing@howsonandhowson.com

Office Action Summary	Application No.	Applicant(s)	
	10/566,300	SUZUKI, RYO	
	Examiner	Art Unit	
	JUN LI	1732	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 November 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 4-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 4-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

1. **Claim 1, 5 and 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeda (JP09-260139) in view of Bates *et al.* (1992, Solid State Ionics, 52:235-242) and Watanabe (JP09-316630).**

Takeda teaches a perovskite oxide composition $La_{1-x}A_xMnO_Z$ wherein A can be Ca, Ba or Sr and $0.05 \leq x \leq 0.5$, $2.7 \leq z \leq 3$ (Clm 1-3), which read onto the recited composition in the instant claim. Takeda further teaches a sputtering target such as a thin film can be formed by this perovskite composition via a sputtering technique (abstract, [00014]) and the crystal size of this compound is 10 nm-100µm ([0007]) for a needed electrical resistance and magneto-resistive effect. It is to be noted that the range of x and z overlaps with the range of x and α in the instant claim and the crystal size also overlaps with the recited size in the claim, thus render a prima facie obviousness (See § MPEP 2144.05 [R-5] I).

Takeda is silent about the specific recited resistivity and relative density, and purity.

Bates teaches a pervoskite composition with formula such as $La_{1-x}Sr_xCrO_3$, $Y_{1-x}Sr_xCrO_3$ (where α=0) (abstract, line 7 and Fig 2, page 237), $La_{1-x}Sr_xMnO_3$ (page 236 last paragraph line 7) having a particle size 1-100nm (abstract, line 3), a density greater than 95% and 98% (page 237, under section 3 Air-sintering of chromites, first

paragraph, line 8-9; first paragraph under section 3.2 and Fig 2; First line, page 239); a resistivity much less than 10 Ωm (converted from electrical conductivity of Fig 6-8). Bates further discloses electrical properties of the manganites are dependent upon processing conditions, grain size and /or uniform compositions (page 240 right column second paragraph). Bates also discloses particle size, crystalline structure and surface area of manganite particles can be controlled (page 236 last paragraph).

It would have been obvious to one of ordinary skill in the art at the time of invention filed to adopt probable processing condition to obtain a desired resistivity as shown by Bates to improve the sputtering target of Takeda because resistivity is a desired property and one of ordinary skill in the art can obtain a desired resistivity for this sputtering target's intended usage in solid oxide fuel cell as suggested by Bates (Introduction page 235).

Furthermore, it is noted the applied references (Takeda in view of Bates) already teach a substantially similar composition/product (i.e. sputtering target), thus similar properties such as resitivity, density, particle size, purity are expected absent evidence to the contrary.

With respect to the recited density and purity, Wantanabe teaches a sputtering target can be made with a relative density of 95-99%, and purity regulated >4N and particle size less than 20 μm to prevent target cracking (abstract, claim 1,[0006], [0012]) via controlling pressure and sintering conditions. Wantanabe further discloses the sintered product is made to have a purity more than 4N or higher in order to prevent the growth of the grains in said sintered compact ([0011]) of the sputtering target while a

high density sintered compact is good for making a high density sputtering target without cracking ([0004]-[0010]).

It would have been obvious to one of ordinary skill in the art at the time of invention filed to adopt the high purity and high density of the sputtering target as shown by Wantanabe to improve the sputtering target made from composition of $La_{1-x}A_xMnO_3$ as shown by Takeda in view of Bates. One of ordinary skill in the art would have been motivated to do so because controlling the sputtering target properties such as density, purity, particle sizes can minimize the cracking formation during a high power and high film formation sputtering process as indicated by Wantanabe ([0003],[0006], abstract, Clm1-3).

2. **Claim 4 and 6-7, 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeda (JP09-260139) in view of Bates *et al.* (1992, Solid State Ionics, 52:235-242) and Watanabe (JP09-316630) as applied above, and further in view of Dortmund (Phase transitions of MnO3 compounds revealed by nonlinear magnetooptics, Applied Physics, B74, 2002:749-758).**

Takeda further discloses the perovsktie oxide compound can be produced by sintering process, therefore a sintering body of the perovskite compound is expected (0014], [0016]).

Takeda in view of Bates and Watanabe is silent about the recited A element is Mg and Ra element is Sc or Ce, Pr rare earth etc. However, Bates already teaches substitution of A site element of rare earth element such as La and Y by alkaline earth

element such as Sr, and Ca. Thus A element is a Mg element is just an obvious modification over the prior arts.

Dortmund teaches a pervoskite composition with a general formula $R_{1-x}A_xMnO_3$ wherein A being alkaline earth ions and R being rare earth elements such as selected from Sc, Y, Er, Tm, Yb, Lu (page 749 right column lines 1-2 and right column second paragraph lines 1-3) and other perovskite compound such as $Pr_{1-x}Ca_xMnO_3$ or $Nd_{1-x}Sr_xMnO_3$ wherein x can be from 0 to 1 (abstract, page 755 first paragraph, Fig 8). It is noted that rare earth elements including scandium, yttrium, and the fifteen lanthanides (i.e. lanthanoid elements) and alkaline earth elements can be Mg, Ca, Sr.

It would have been obvious to one of ordinary skill in the art at the time of invention filed to adopt such pervoskite compound as shown by Dortmund to modify the sputtering target of Takeda in view of Bates and Watanabe because such pervoskite composition provides unusual magnetic and electronic properties (page 749, right column first 4 lines) which can help making a desired final product, i.e. sputtering target and such composition also expands the sputtering target composition choices. Furthermore, combining known elements for predictable results is well within the scope of one ordinary skill in the art.

Furthermore, it is noted the applied references already teach a substantially similar composition/product (i.e. sputtering target), thus similar properties such as resitivity, density, particle size, purity are expected absent evidence to the contrary.

Response to Arguments

Applicant's amendments filed 11/22/2010 have been acknowledged and previous 112 rejections have been withdrawn due to the amendments.

Applicant's arguments filed 11/22/2010 have been fully considered but they are not persuasive. In response to applicant's arguments about the applied individual references not teaching certain limitation, such as JP'139 not addressing density etc, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In response to applicant's arguments about JP'139 disclosed y ratio of Mny less than 1 providing a better magnetic resistance than that of $Mn_{y=1}$, it is noted that reference's teaching is not limited by its preferred embodiment. Furthermore, JP'139 further discloses $La_{1-x}A_xMnO_3$ with no deficit of Mn (meaning y ratio=1) is well known in the art with a magnetic resistance ([0006]), thus one of ordinary skill in the art would have been obvious to adopt such well known compound for forming a sputtering target. In response to applicant's arguments about Bates only disclosing chromites, it is noted that Bates also discloses manganites such as $La_{1-x}Sr_xMnO_3$ (page 236 last paragraph line 7) and particle size, crystalline structure and surface area of such manganite particles can be controlled (page 236 last paragraph). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention filed to adopt probable processing condition to obtain a desired resistivity as shown by Bates to improve the sputtering target of Takeda because resistivity is a desired property and one of ordinary

skill in the art can obtain a desired resistivity for this sputtering target's intended usage in solid oxide fuel cell as suggested by Bates (Introduction page 235).

Applicant is kindly reminded that pure arguments without solid data/evidence for backing up are insufficient to overcome the rejections.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JUN LI whose telephone number is (571)270-5858. The examiner can normally be reached on Monday-Friday, 9:00am-5:30 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis Mayes can be reached on 571-272-1234. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JUN LI/
Examiner, Art Unit 1732
12/27/2010

/Melvin Curtis Mayes/

Supervisory Patent Examiner, Art Unit 1732